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(54) **BISTABLE COMPLIANT MECHANISM**

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(58) **Field of Search** 200/329, 341, 200/343, 339, 600, 181; 267/157–182

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(57) **ABSTRACT**

A compliant, bistable mechanism has a plurality of segments coupled end-to-end in a series to form a continuous chain of segments. The plurality of segments includes at least two rigid segments and at least one relatively flexible and resilient segment. Adjacent rigid segments are coupled by flexible joints or pin joints. The flexible and resilient segment is coupled to adjacent segments either fixedly or by pin joints. There are at least four pin joints, flexible joints, and/or flexible and resilient segments. The joints allow relative movement of the segments while the flexible and resilient segment resists movement and biases the segments. The segments move between first and second stable equilibrium positions. The segments have a pseudo-rigid-body model resembling a four-bar linkage. The segments and flexible joints may be integrally formed. First and second electrical contacts may be coupled to the segments to form an electrical connection as the segments move to one of the positions.

104 Claims, 6 Drawing Sheets